

Claims:

1. A method of polishing a surface of an article using a polishing layer and a polishing medium, the method comprising the steps of:
 - (a) providing the polishing medium so that the polishing medium is present between the surface of the article and the polishing layer;
 - (b) rotating the article so that the surface rotates at a first rotational rate about a first rotational axis;
 - (c) moving the polishing layer at a velocity relative to the first rotational axis; and
 - (d) selecting at least one of the first rotational rate and the velocity of the polishing layer such that backmixing does not occur within the polishing medium between the surface and the polishing layer when the surface is rotated at the first rotational rate and the polishing layer is moved at the velocity.
2. The method according to claim 1, wherein step (c) includes rotating the polishing layer about a second rotational axis.
3. The method according to claim 2, wherein the second rotational axis is spaced from the first rotational axis by a separation distance and step (d) includes determining at least one of the second rotational rate and the first rotational rate as a function of the separation distance.
4. The method according to claim 3, wherein the surface of the article has an effective radius and step (d) further includes determining at least one of the second rotational rate and the first rotational rate as a function of the effective radius.
5. The method of claim 1 wherein at least a portion of the polishing medium flows through grooves in the polishing layer such that backmixing does not occur in the grooves.
6. The method according to claim 1, wherein step (c) includes moving the polishing layer linearly at a linear velocity.
7. The method according to claim 6, wherein the surface of the article has an effective radius and step (d) includes determining at least one of the first rotational rate and the linear velocity as a function of the effective radius.

8. A method of polishing a surface of an article using a polishing layer while rotating the article about a first rotational axis at a first rotational rate and moving the polishing layer relative to the first rotational axis at a velocity, the method comprising the steps of:
 - (a) selecting one of a backmixing mode for self-sustaining chemistries and a non-backmixing mode for non-self-sustaining chemistries; and
 - (b) selecting at least one of the first rotational rate of the article and the velocity of the polishing layer based upon the one of the backmixing mode and the non-backmixing mode selected in step (a).
9. The method according to claim 8, wherein the polishing layer is rotated about a second rotational axis spaced from the first rotational axis by a separation distance and step (b) includes determining at least one of the second rotational rate and the first rotational rate as a function of the separation distance.
10. The method according to claim 8, wherein the method includes the non-backmixing mode to reduce defectivity.